Data Limitations and Validation Report

Lockheed Idaho Technologies

SDG 93090304

Argonne National Laboratory - West

Three Aqueous Samples

Semivolatile Organic Compounds

Validated by:

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1.0 INTRODUCTION

The Argonne National Laboratory - West sample set for Case No. 93090304, SDG 93090304 consists of three (3) aqueous samples analyzed for Target Compound List (TCL) semivolatile organic compounds. All analyses were conducted using SW-846 Method 8270 analytical and reporting protocols. The analyses were performed by the Biospherics Laboratory using the protocols outlined in the ANL-West SOW. The data were reported as a Level IV analysis. A Level A review was performed on the samples in this SDG. A total of 192 sample data points were reported in this analytical data set.

The analytical data from these analyses were reviewed by HALLIBURTON NUS Corporation personnel in accordance with ERP Standard Operating Procedure SMO-SOP-12.1.3.

2.0 QUALITY CONTROL SUMMARY

The data were evaluated based on the following parameters:

Data Completeness GC/MS Tuning and Mass Calibration Initial and Continuing Calibrations

- Blank Analyses
 Surrogate Spike Recoveries
 Matrix Spike/Matrix Spike Duplicate Results
 Internal Standards Performance
 System Performance and Detection Limits
- * Compound Identification
- Compound Quantitation

The asterisk indicates that all quality control criteria were met for this parameter. Problem areas affecting data usability are discussed in Section 4.0 of this report. A Glossary of Data Validation Flags which defines the validation qualifiers applied on a sample-specific basis is presented in Section 6.0.

3.0 DATA COMPLETENESS

The data presented in Case No. 93090304, SDG 93090304 consists of semivolatile organic results for three (3) aqueous samples as follows:

L30416(93090304-16) L30424(93090304-24) L30429(93090304-29)

The data package was incomplete as submitted. The following is a list of forms missing from this data package: Chain of custody forms, initial calibration Form VIs and the corresponding DFTPP tuning Form Vs. Also, presentation and documentation of data package deliverables were extremely poor. The data package does not conform to a Level A deliverable. Notable omissions on the laboratory forms includes: incomplete and incorrect Form Vs, missing surrogate recovery information for sample L30416(93090304-16), omission of raw data(i.e. quantitation reports and chromatograms) for all three environmental samples, no internal standard areas for samples L30416(93090304-16) and L30429(93090304-29), and incorrect internal standard areas reported on the Form VIII for the quality control samples. No contact with the laboratory was required to complete the validation of this package.

4.0 SUMMARY OF DATA USABILITY

It should be noted that a chain of custody form for the samples contained in this SDG was not provided. Therefore, holding times until extraction could not be evaluated.

The laboratory did not provide DFTPP tuning Form Vs corresponding with the initial calibrations performed on 08/27/93 and 09/01/93. Also, the DFTPP tuning Form Vs provided were incorrectly recorded. Based on information contained in the raw data, the data reviewer amended the appropriate forms.

Initial calibration Form VIs from 08/27/93 and 09/01/93 were not contained in this data package. Therefore, Percent Relative Standard Deviations (%RSDs) could not be evaluated.

A continuing calibration Percent Difference %D greater than 50% was reported for 2,4-dinitrophenol. Positive and nondetected results are affected by this noncompliance. A nondetected result for 2,4-dinitrophenol was qualified as estimated, (UJ), in the affected sample.

Continuing calibration %Ds greater than 25% were reported for bis(2-chloroisopropyl)ether, benzoic acid, hexachlorocylcopentadiene, 4-nitrophenol, 4,6-dinitro-2-methylphenol, pentachlorophenol, di-nbutylphthalate, pyrene, 3,3-dichlorobenzidine, bis(2-ethylhexyl)phthalate, di-n-octylphthalate, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene and benzo(g,h,i)perylene. Positive results only are affected by these noncompliances. No action was necessary since no positive results were reported for the aforementioned compounds in the affected samples.

Surrogate recovery information for sample L30416(93090304-16) was not provided in the data package. Therefore, this sample could not be evaluated for this parameter.

The blank spike sample L30405 had an incorrect recovery reported for the surrogate 2-fluorophenol. The data reviewer amended the Form II.

The Matrix Spike/Matrix Spike Duplicate (MS/MSD) analyses of sample L30416 yielded high Percent Recoveries (%Rs) for 4-chloro-3-methyphenol, 2,4-dinitrotoluene and pentachlorophenol. Positive results only are affected by these noncompliances. No action was taken since only nondetected results were reported for these compounds in the unspiked sample.

Internal standard areas were not provided for samples L30416(93090304-16) and L30429(93090304-29). Therefore, theses samples were not evaluated for internal standard noncompliances.

It should be noted that laboratory reported the internal standard areas for the quality control samples in this SDG incorrectly. Based on the raw data the data reviewer amended the appropriate forms.

Annotated laboratory Form I data summary reports showing the data and relevant qualifier flags applied are presented in Appendix A of this report. Copies of the unqualified data summary reports as reported by the laboratory are provided in the attached Appendix B. The attached Appendix C includes documentation to support the findings discussed in this report.

TABLE 1

LOCKHEED IDAHO TECHNOLOGIES

Case No. 93090304, SDG 93090304

SEMIVOLATILE ORGANIC COMPOUNDS

Sample No.	Qualifier Flags
L30416(93090304-16)	·
L30424(93090304-24)	
L30429(93090304-29)	J^1

^{*} See Section 6.0 Glossary of Data Validation Flags for qualifier flag definitions.

A sample-specific summary of the data validation flags applied is depicted in Table 1, appearing on the previous page. The qualifier flags used as a result of the validation process are defined in Section 6.0 (Glossary of Data Validation Flags) of this report. Details regarding the application of the validation qualifiers are discussed in the remainder of this section.

4.1 Holding Times

Chain of custody forms for the samples contained in this SDG were not provided. Therefore, holding time noncompliances could not be properly evaluated.

4.2 GC/MS Tuning and Mass Calibration

The laboratory did not provide DFTPP tuning Form Vs corresponding with the initial calibrations performed on 08/27/93 and 09/01/93. Also, the DFTPP tuning Form Vs provided from 09/09/93 at 09:16 and 09/09/93 at 09:45 were incorrectly recorded. Based on information contained in the raw data, the data reviewer amended the appropriate forms.

4.3 Calibrations

The laboratory did not provide any initial calibration Form VIs for the samples in this SDG. Therefore, Percent Relative Standard Deviations (%RSDs) could not be evaluated.

The continuing calibration performed on instrument GC/MS B (09/09/93) at 09:42 contained the following %D which failed to meet the 50% quality control criterion:

Compound	_%D
2,4-Dinitrophenol	61.2
Affected Samples:	L30429(93090304-29)

A nondetected result for 2,4-dinitrophenol was qualified as estimated, (UJ), in the affected sample.

The continuing calibration performed on instrument GC/MS B (09/09/93) at 09:42 contained the following %Ds which failed to meet the 25% quality control criterion:

Compound	<u>%D</u>
Compound Benzoic Acid Hexachlorocylopentadiene 4-Nitrophenol 4,6-Dinitro-2-methylphenol Pentaclorophenol Pyrene 3,3'-Dichlorobenzidine Bis(2-ethylhexyl)phthalate Di-n-octylphthalate Indeno(1,2,3-cd)pyrene	%D 30.5 44.4 37.4 42.3 28.9 33.4 35.8 26.6 28.4 28.6
Dibenzo(a,h)anthracene Benzo(g,h,i)perylene	30.7 28.0

Affected Samples: L30429(93090304-29)

No actions were necessary for the aforementioned compounds since no positive results were reported, in the affected sample.

The continuing calibration performed on instrument GC/MS 4 (09/09/93) at 10:09 contained the following %Ds which failed to meet the 25% quality control criterion:

	npound	<u>%D</u>
bis(2-chloroisopropyl)ether 29.6 4-Nitrophenol 27.6 Di-n-butylphthalate 30.6 Dibenzo(a,h)anthracene 26.2	phenol utylphthalate	30.6

Affected Samples: L30416(93090304-16), L30424(930990304-24)

No actions were necessary for the aforementioned compounds since no positive results were reported, in the affected samples.

4.4 Surrogate Recoveries

Surrogate recovery information for sample L30416(93090304-16) was not provided in the data package. Since no raw data was provided for this sample it was impossible for the data reviewer to calculate Percent Recoveries. Therefore, sample L30416(93090304-16) could not be evaluated for this parameter.

The blank spike sample L30405 had an incorrect recovery reported for the surrogate 2-fluorophenol. The data reviewer amended the Form II.

4.5 Matrix Spike/Matrix Spike Duplicate Results

The MS/MSD analyses of sample L30416 yielded high %Rs for 4-chloro-3-methyphenol, 2,4-dinitrotoluene and pentachlorophenol. Positive results only are affected by these noncompliances. No action was taken since only nondetected results were reported for these compounds in the unspiked sample.

4.6 Internal Standards

Internal standard areas were not provided for samples L30416(93090304-16) and L30429(93090304-29). Since no raw data was provided for these samples it was impossible for the data reviewer to determine internal standard areas. Therefore, samples L30416(93090304-16) and L30429(93090304-29) were not evaluated for internal standard noncompliances.

It should be noted that laboratory reported the internal standard areas for the quality control samples in this SDG incorrectly. Based on the raw data the data reviewer amended the appropriate forms.

4.7 Additional Comments

It should be noted that the detection limits on the laboratory Form Is may be incorrect. The detection limits may be low by a factor of two since only 500 ml were extracted instead of the method indicated amount of 1000 ml.

The laboratory did not provide any raw data(i.e. quantiation reports and chromatograms) for the environmental samples contained in this SDG.

5.0 SUMMARY OF LABORATORY PERFORMANCE

The laboratory did not provide chain of custody forms. Form Vs and the corresponding Form VIs. Raw data was not provided for the environmental samples. Several forms were completed incorrectly. A continuing calibration %D greater than 50% was reported for 2,4-dinitrophenol. Numerous compounds had continuing calibration %Ds which exceeded the 25% quality control limit.

6.0 GLOSSARY OF DATA VALIDATION FLAGS

The following data validation flags were applied to the sample data for reasons detailed previously in this report:

J¹ - Accept data, but qualify a nondetected result for 2,4-dinitrophenol as estimated, (UJ), as a result of a continuing calibration %D greater than 50%.

7.0 REFERENCES

The data referenced in this report were validated in accordance with the protocols outlined in ERP Standard Operating Procedure SMO-SOP-12.1.3 as presented in ERP-SOW-37. In addition, details stipulating laboratory procedures as outlined in the ANL-West SOW were referenced.

APPENDIX A QUALIFIED LABORATORY RESULTS

_ab Name: BIOSPHER	ICS		Contract:	ARGONNE NAT LAB	L30416	
Lab Code: 93090304	Case No.:		SAS No.:		·	No.:
Matrix: (soil/water)	WATER			Lab Sample ID:	93090304-1	6
Sample wt/vol:	500	(g/mL)	mL	Lab File ID:	>D1579	
Level: (low/med)	LOW			Date Received:	08/31/93	
Moisture: 0	decant	ed:(Y/N)	N	Date Extracted:	09/07/93	
Concentrated Extract	Volume:	1000	(uL)	Date Analyzed:	09/09/93	
Injection Volume:	2	(uL)		Dilution Factor:	1	
GPC Cleanup: (Y/N)	N	pH:				AKB AB
CAS NO.	COMPOUND		CONCENTRATI		ug/L	1 25 Q
108-95-2	bis (2-Chloroph 1,3-Dichlo 1,4-Dichlo 1,2-Dichlo 2-Methylph 2,2'-oxybi 4-Methylph N-Nitroso- Hexachloro Nitrobenze Isophorone 2-Nitrophe	enol robenzene robenzene robenzene enol s(1-Chlor enol di-n-prop ethane ne nol ylphenol roethoxy) rophenol hlorobenze e iline butadiene -methylph phthalene cyclopent hlorophen hlorophen line thalate lene otoluene line	methane ienol iadiene			10 U

Forms by WindowChem(707)864-0845/p/al1013/w3.0/1/1/96

Lab Name:	BIOSPHER	ICS		Contract:	ARGONNE NAT LAB	L3040£		
Lab Code:	93090304	Case No.:		SAS No.:		SDG	No.:	
Matrix: (soi	.l/water)	WATER			Lab Sample ID:	93090304-1	6	
Sample wt/vo	1:	500	(g/mL)	mL	Lab File ID:	>D1579		
Level: (low/	med)	LOW			Date Received:	08/31/93		
† Moisture:	0	decan	ted:(Y/N)	N	Date Extracted:	09/07/93		
Concentrated	Extract	Volume:	1000	(uL)	Date Analyzed:	09/09/93	<u> </u>	
Injection Vo	lume:	-	(uL)		Dilution Factor:	<u> </u>		ħ.
GPC Cleanup:	(Y/N)	N	pH:				Alc	134
CAS NO.		COMPOUND		CONCENTRATI		ug/L	°	•
51-28-5 100-02-7 132-64-9 121-14-2 84-66-2 7005-72-3 86-73-7 100-01-6 534-52-1 86-30-6 101-55-3 118-74-1 85-01-8 120-12-7 86-74-8 84-74-2 129-00-0 85-68-7 91-94-1 56-55-3 218-01-9 205-99-2 207-08-9		4-Nitrophe Dibenzofur 2,4-Dinitr Diethylpht 4-chloroph Fluorene 4-Nitroani 4,6-Dinitr N-Nitrosoc 4-Bromophe Hexachloro Pentachloro Pentachloro Pentachloro Pentachloro Phenanthre Anthracene Carbazole Di-n-butyl Fluoranthe Pyrene Butylbenzy 3,3'-Dichl Benzo(a) an Chrysene bis(2-Ethy Di-n-octyl Benzo(b) fl Benzo(k) fl	enol can cotoluene chalate chalate chalate chalate chalate chalate chalate chalate chalate cophenylam cophenol che chalate	e ine thalate			50 U 50 U 10 U 1	J-LJ-LJ-LJ-LJ-LJ-LJ-LJ-LJ-LJ-LJ-LJ-LJ-LJ
50-32-8 193-39-5 53-70-3 191-24-2		Benzo(a) py Indeno(1,2 Dibenz(a,h Benzo(g,h,	, 3-cd) pyr) anthrace	ne !			10 U 10 U	1-1-1
		•		ļ	· · · · · · · · · · · · · · · · · · ·		10 U	_

18 SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name:	BIOSPHER	cs		Contract:	ARGONNE NAT LAB	L30429	
Lab Code:	93090304	Case No.:		SAS No.:		SDG No.:	
Matrix: (soi	l/water)	WATER			Lab Sample ID:	93030904-2/19	
Sample wt/vo	1:	500	(g/mL)	mL	Lab File ID:	>CG980	
Level: (low/	med)	LOW			Date Received:	08/31/93	
è Moisture:	0	decan	ted:(Y/N)	N	Date Extracted:	09/07/93	
Concentrated	Extract	Volume:	1000	(uL)	Date Analyzed:	09/09/93	
Injection Vo	lume:	2	(uL)		Dilution Factor:	1	
GPC Cleanup:	(Y/N)	N	pH:				(b).
CAS NO.		COMPOUND		CONCENTRATI		ug/L	En J
108-95-2 111-44-4 95-57-8 541-73-1 106-46-7 95-50-1 108-60-1 106-44-5 621-64-7 188-95-3 188-75-5 111-91-1 120-83-2 120-82-1 191-20-3 106-47-8 87-68-3 177-47-4 88-06-2 91-58-7 131-11-3 1208-96-8 606-20-2		bis (2-Chloroph 2-Chloroph 1,3-Dichloroph 1,4-Dichloroph 2-Methylph 2,2'-oxyb 4-Methylph N-Nitroson Hexachloron 2-Nitrophoron 2-Nitrophoron 2,4-Dimethorophorophorophorophorophoron 1,2,4-Tri Naphthaled 4-Chlorophorophorophorophorophorophorophoro	menol probenzend probenzend probenzend probenzend probenzend probenzend probenzend probenzend probend	ropropane) pylamine methane zene henol tadiene nol nol		10 U	R
99-09-2 83-32-9		3-Nitroan Acenaphth				50 u 10 u	J

Lab Code: 93090304 Case No.: SAS No.: SDG No.:	Lab Name: 1	BIOSPHER	ICS		_ Contract:	ARGONNE NAT LAB	L30429		
Sample wt/vol: 500 (g/mL) mL	Lab Code:	3090304	Case No.:		SAS No.:		SDG	No.:	
Level: (low/med) LOW	Matrix: (soi)	l/water)	WATER	_		Lab Sample ID:	93090304-29	i	
Moisture: 0	Sample wt/vol	L:	500	(g/mL)	mL	Lab File ID:	>CG980		
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 09/09/93	Level: (low/m	ned)	LOW	_		Date Received:	08/31/93		
Injection Volume:	3 Moisture: _	0	. decar	ted: (Y/N)	N	Date Extracted:	09/07/93		
CONCENTRATION UNITS: CAS NO. COMPOUND (ug/L or ug/Kg) ug/L CONCENTRATION UNITS: CAS NO. COMPOUND (ug/L or ug/Kg) ug/L CONCENTRATION UNITS: CAS NO. COMPOUND (ug/L or ug/Kg) ug/L CONCENTRATION UNITS: CAS NO. COMPOUND (ug/L or ug/Kg) ug/L CONCENTRATION UNITS: CAS NO. COMPOUND (ug/L or ug/Kg) ug/L CONCENTRATION UNITS: CAS NO. COMPOUND (ug/L or ug/Kg) ug/L CONCENTRATION UNITS: CAS NO. COMPOUND (ug/L or ug/Kg) ug/L CONCENTRATION UNITS: CAS NO. COMPOUND (ug/L or ug/Kg) ug/L CONCENTRATION UNITS: CAS NO. COMPOUND (ug/L or ug/Kg) ug/L CONCENTRATION UNITS: CAS NO. COMPOUND (ug/L or ug/Kg) ug/L CONCENTRATION UNITS: CAS NO. COMPOUND (ug/L or ug/Kg) ug/L CONCENTRATION UNITS: CAS NO. COMPOUND (ug/L or ug/Kg) ug/L CONCENTRATION UNITS: CAS NO. COMPOUND (ug/L or ug/Kg) ug/L CONCENTRATION UNITS: CAS NO. COMPOUND (ug/L or ug/Kg) ug/L CONCENTRATION UNITS: CAS NO. COMPOUND (ug/L or ug/Kg) ug/L CONCENTRATION UNITS: CAS NO. COMPOUND (ug/L or ug/Kg) ug/L CONCENTRATION UNITS: CAS NO. COMPOUND (ug/L or ug/Kg) ug/L CONCENTRATION UNITS: CAS NO. COMPOUND (ug/L or ug/Kg) ug/L concentration ug/L or ug/Kg) ug/L or ug/L concentration ug/L or ug/Kg) ug/L or ug/L or ug/Kg) ug/L or ug/Kg) ug/L or ug/L or ug/Kg) ug/L or ug/L or ug/Kg) ug/L or ug/L or ug/Kg) ug/L or ug/Kg) ug/L or ug/Kg) ug/L or ug/Kg) ug/L or ug/L or ug/Kg) ug/L or ug/L or ug/Kg) ug/L or ug/Kg) ug/L or ug/L or ug/Kg) ug	Concentrated	Extract	Volume:	1000	(uL)	Date Analyzed:	09/09/93		
CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L (51-28-5	Injection Vol	ume:	1	(uL)		Dilution Factor:	<u>*</u>		
CAS NO. COMPOUND (ug/L or ug/Kg) ug/L 51-28-5	GPC Cleanup:	(Y/N)	N	. рН:					Ž
100-02-7 4-Nitrophenol 50'U 132-64-9 Dibenzofuran 10 U 121-14-2 2,4-Dinitrotoluene 10 U 84-66-2 Diethylphthalate 10 U 84-66-2 Diethylphthalate 10 U 86-73-7 Fluorene 10 U 100-01-6 4-Nitroaniline 50 U 534-52-1 4,6-Dinitro-2-methylphenol 50 U 86-30-6 N-Nitrosodiphenylamine (1) 10 U 101-55-3 4-Bromophenyl-phenylether 10 U 118-74-1 Hexachlorobenzene 10 U 87-86-5 Pentachlorophenol 50 U 87-86-5 Pentachlorophenol 50 U 86-74-8 Carbazole 10 U 86-74-8 Carbazole 10 U 86-74-2 Di-n-butylphthalate 10 U 129-00-0 Pyrene 10 U 85-68-7 Butylbenzylphthalate 10 U 109-94-1 3,3'-Dichlorobenzidine 20 U 218-01-9 Chrysene 10 U 117-84-0 Di-n-octylphthalate 10 U 205-99-2 Benzo(a) fluoranthene 10 U 207-08-9 Benzo(b) fluoranthene 10 U 207-08-9 Benzo(b) fluoranthene 10 U 100-01-2	CAS NO.		COMPOUND				ug/L	(Q
53-70-3 Dibenz(a,b)anthracene	100-02-7		4-Nitrophe Dibenzofu 2,4-Dinit Diethylphe 4-chlorope Fluorene 4-Nitroane 4,6-Dinit N-Nitrosoe 4-Bromophe Hexachloro Pentachloro Pyrene Butylbenzy 3,3'-Dichloro Benzo (a) ar Chrysene bis (2-Ethy Di-n-octyl Benzo (b) fil Benzo (k) fil Benzo (k) fil Benzo (k) fil Benzo (k) fil Benzo (k) fil Benzo (k) fil	enol ran rotoluene thalate henyl-phen iline ro-2-methy diphenylam enyl-pheny benzene rophenol ene cylphthalate lorobenzid nthracene ylhexyl)ph lphthalate luoranthen luoranthen	dphenol ine (1) dether			50 U 10 U 10 U 10 U 10 U 10 U 10 U 50 U 10 U 1	
191-24-2 Benzo(g,h,i)perylene	53-70-3		Dibenz(a, l	n) anthrace	ne i			10 U	

SERIVOL	ATILE ORGANICS ANA	LLYSIS DATA SHE	T .	egypt Pow
Lab Name: Biosphy	erics	Contract:		0424
	_ Case No.:			
Matrix: (soil/wate			Sample ID: 937	The state of the state of the state of
Sample wt/vol:	500 (g/mL) A	_	File ID: ^DJ	The regarding the first series of the first se
Level: (low/med)			Received: 09-	
1 Moisture:	decanted: (Y/N)		Extracted: 09-	14.5 (1.5 (1.5 (1.5 (1.5 (1.5 (1.5 (1.5 (1
	act Volume: 1000		Analyzed: 930	
Injection Volume:			ion Factor:	
*	<u>№</u> рн:		TON FACCOL:	
			ON TOUTOGO AY)
CAS NO.	COMPOUND	(ug/L or ug	ON UNITS: ALL	90
108-95-2	Phenol			· · · · · · · · · · · · · · · · · · ·
111-44-4	bis(2-Chloroe	thyllether	ΙΩ	
95-57-8	2-Chloropheno	}	<u> </u>	-
541-73-1	1,3-Dichlorob	+ <u> </u>	<u> </u>	
106-46-7	1,4-Dichlorob	euseue	<u> </u>	_4
/ 95-50-1	1,2-Dichlorob	enzene	<u> </u>	14
95-48-7	2-Nethylpheno	enzene	10	
108-60-1		1 <u></u>	10	
106-44-5	2,2'-oxybis(1- 4-Methylpheno	-curocobrobane)		NR
631-64-7		L		11
621-64-7	N-Nitroso-di-	n-propylamine	10	u
07-72-1	Hexachloroeth	nne	10	\overline{u}
98-95-3	Nitrobenzene_		10	u
78-59-1	Isophorone		10	u l
88-75-5	2-Nitrophenol		1/2	-
105-67-9	2,4-Dimethylph	nenol	50	- 1
111-91-1	bis(2-Chloroet	thoxy) methane	13]
120-83-2	2,4-Dichloroph	nenol	50	
120-82-1	1,2,4-Trichlor	robenzene		-
91-20-3	Naphthalene		18	-
106-47-8	4-Chloroanilii	ne	50	- 4
87-68-3	Hexachlorobuta	ndiene		
59-50-7	4-Chloro-3-me	thylphenol	1 <u> 2</u>	<u> </u>
91-57-6	2-Methylnapht	halene	$-\frac{50}{}$	<u>u</u>
77-47-4	Hexachlorocyc	lopentadieno		<u>u</u>
88-06-2	2,4,6-Trichlo	rophenol		4
95-95-4	2,4,5-Trichlo	ropperol	12	<u>u</u>
91-58-7	2-Chloronapht	halane		
88-74-4	2-Chioronaphe 2-Nitroanilin	warene	·	Ч.
131-11-3	Dimethylphtha	12+0	50	4
202-06-9	pimethyiphtha	Tace	·\	u
200-90-8	Acenaphthylen	e	.[
000-20-2	2,6-Dinitroto	rneue		
99-09-2	3-Nitroanilin	e	55	- 1 .
83-32-9	Acenaphthene_		17	
			· , ———————————————————————————————————	J

1C TILE ORGANICS ANALYSIS DATA SHEET

Le Name: Biosph	merics	Contract:	13007E
Tab Code:	Case No.:	SAS No.:S	DG No.:
Matrix: (soil/wate		Lab Sample	
cample wt/vol:	(g/mL) MI		: <u>\D[582</u>
[Level: (low/med)		Date Receiv	ed:
•	decanted: (Y/N)	Date Extrac	ted: <u>09-07-43</u>
=	act Volume: 1000		ed: 09.89.43
Injection Volume:	(uL)	Dilution Fac	ctor:
;PC Cleanup: (Y	/N) <u>N</u> pH:	-	AKB ,96
CAS NO.	COMPOUND	CONCENTRATION UNIT	rs:

100-02-74-Nitrophenol 50	10		J	
100-02-74-Nitrophenol 132-64-9Dibenzofuran 1	10	51-28-52.4-Dinitrophenol	50	4
132-64-9	32-64-9	100-02-74-Nitrophenol	50	_4
121-14-2	21-14-2	112-64-9Dibenzofuran		_4
84-66-2 — Diethylphthalate 7005-72-3 — 4-Chlorophenyl-phenylether 86-73-7 — Fluorene 100-01-6 — 4-Nitroaniline 534-52-1 — 4,6-Dinitro-2-methylphenoi 86-30-6 — N-Nitrosodiphenylamine (1) 101-55-3 — 4-Bromophenyl-phenylether 118-74-1 — Hexachlorobenzene 87-86-5 — Pentachlorophenol 85-01-8 — Phenanthrene 120-12-7 — Anthracene 86-74-8 — Carbazole 84-74-2 — Di-n-butylphthalate 129-00-0 — Pyrene 85-68-7 — Butylbenzylphthalate 129-04-1 — 3,3'-Dichlorobenzidine 156-55-3 — Benzo(a) anthracene 17-81-7 — bis(2-Ethylhexyl)phthalate 17-84-0 — Di-n-octylphthalate 17-84-0 — Di-n-octylphthalate 17-84-0 — Benzo(b) fluoranthene 193-39-5 — Henzo(a) pyrene 193-39-5 — Fludeno (1,2,3-cd) pyrene 193-39-5 — Fludeno (1,2,3-cd) pyrene 193-70-3 — Dibenz(a,h) anthracene	4-66-2	121-14-22,4-Dinitrotoluene		_4
1005-72-34-Chlorophenyl-phenylether 10	10	84-66-2Diethylphthalate		_4
100-01-6	10	7005-72-34-Chlorophenyl-phenylether	10	<u></u>
100-01-64-Nitroaniline 534-52-14,6-Dinitro-2-methylpheno1 50 10 10 10 10 10 10 1	100-01-6	R6-73-7Fluorene	Ω	4
534-52-1	334-52-14,6-Dinitro-2-methylphenoi 30 30 30 30 30 30 30 3	100-01-64-Nitroaniline	50	_4_
86-30-6N-Nitrosodiphenylamine (1) 101-55-3	10	534-52-14.6-Dinitro-2-methylpheno1[50	_4_
101-55-3	101-55-34-Bromophenyl-phenylether 10 10 10 10 10 10 10 1	86-30-6N-Nitrosodiphenylamine (1)		_4_
118-74-1	18-74-1	101-55-34-Bromophenyl-phenylether	10	
87-86-5	17-86-5	118-74-1Hexachlorobenzene	10	
## ## ## ## ## ## ## ## ## ## ## ## ##		87-86-5Pentachlorophenol	50	_4_
120-12-7Anthracene	120-12-7Anthracene	85-01-8Phenanthrene	10	<u>U</u>
86-74-8	NK NK NK NK NK NK NK NK			<u> </u>
84-74-2	10			-NK
206-44-0	129-00-0	84-74-2Di-n-butylphthalate	10	
129-00-0	129-00-0	206-44-0Fluoranthene	10	
85-68-7	B5-68-7		10	<u>u</u>
91-94-13,3'-Dichlorobenzidine 56-55-3Benzo(a) anthracene 218-01-9Chrysene 117-81-7bis(2-Ethylhexyl) phthalate 117-84-0Di-n-octylphthalate 205-99-2Benzo(b) fluoranthene 207-08-9Benzo(k) fluoranthene 193-39-5Benzo(a) pyrene 193-39-5Dibenz(a,h) anthracene	91-94-13,3'-Dichlorobenzidine 56-55-3Benzo(a) anthracene 218-01-9Chrysene 117-81-7bis(2-Ethylhexyl) phthalate 117-84-0Benzo(b) fluoranthene 205-99-2Benzo(b) fluoranthene 207-08-9Benzo(a) pyrene 193-39-5Indeno(1,2,3-cd) pyrene 53-70-3	85-68-7Butylbenzylphthalate	12	
56-55-3	56-55-3Benzo(a) anthracene 218-01-9Chrysene 117-81-7bis(2-Ethylhexyl) phthalate 117-84-0Benzo(b) fluoranthene 205-99-2Benzo(b) fluoranthene 207-08-9Benzo(k) fluoranthene 50-32-8Benzo(a) pyrene 193-39-5Indeno(1,2,3-cd) pyrene 53-70-3	91-94-13,3'-Dichlorobenzidine	20]
218-01-9Chrysene 117-81-7bis (2-Ethylhexyl) phthalate 117-81-7	218-01-9Chrysene Id 117-81-7bis(2-Ethylhexyl)phthalate Id 117-84-0Di-n-octylphthalate Id 205-99-2	56-55-3Benzo(a)anthracene	1	<u>\</u> _
117-81-7bis(2-Ethylhexyl)phthalate 117-84-0Di-n-octylphthalate 205-99-2Benzo(b)fluoranthene 207-08-9Benzo(k)fluoranthene 50-32-8Benzo(a)pyrene 193-39-5Indeno(1,2,3-cd)pyrene 53-70-3	117-81-7bis(2-Ethylhexyl)phthalate 117-84-0Di-n-octylphthalate 205-99-2Benzo(b)fluoranthene 207-08-9Benzo(k)fluoranthene 50-32-8Benzo(a)pyrene 193-39-5Indeno(1,2,3-cd)pyrene 53-70-3Dibenz(a,h)anthracene	218-01-9Chrysene	1	.\4
117-84-0Di-n-octylphthalate	117-84-0Di-n-octylphthalate	117-81-7bis(2-Ethylhexyl)phthalate	.\	-14-
205-99-2Benzo(b) fluoranthene 207-08-9Benzo(k) fluoranthene 50-32-8Benzo(a) pyrene 193-39-5Indeno(1,2,3-cd) pyrene 53-70-3Dibenz(a,h) anthracene	205-99-2Benzo(b) fluoranthene 207-08-9Benzo(k) fluoranthene 50-32-8Benzo(a) pyrene 193-39-5Indeno(1,2,3-cd) pyrene 53-70-3Dibenz(a,h) anthracene	117-84-0Di-n-octylphthalate	\ <u></u>	__
207-08-9Benzo(k) fluoranthene 50-32-8Benzo(a) pyrene 193-39-5Indeno(1,2,3-cd) pyrene 53-70-3Dibenz(a,h) anthracene	207-08-9Benzo(k) fluoranthene 50-32-8Benzo(a) pyrene 193-39-5Indeno(1,2,3-cd) pyrene 53-70-3Dibenz(a,h) anthracene	205-99-2Benzo(b) fluoranthene	112	
50-32-8Benzo(a) pyrene	50-32-8Benzo(a) pyrene 193-39-5Indeno(1,2,3-cd) pyrene 193-70-3Dibenz(a,h) anthracene 193-70-3	207-08-9Benzo(k) fluoranthene	_	_ 4_
193-39-5Indeno(1,2,3-cd)pyrene	193-39-5Indeno(1,2,3-cd)pyrene	50-32-8Benzo(a)pyrene	12_	_ 4_
53-70-3Dibenz(a,h)anthracene	53-70-3Dibenz (a, h) anthracene	193-39-5Indeno(1,2,3-cd)pyrene		_\
191-24-2Benzo(g,h,i)perylene	191-24-2Benzo(g,h,i)perylene	53-70-3Dibenz(a,h)anthracene		_ _4
		191-24-2Benzo(g,h,i)perylene		_ \

^{(1) -} Cannot be separated from Diphenylamine